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# UPDATES: Farm Energy

Data updates from the Resources and Technology Division

Economic Research Service  
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## Farm Energy: Prices, Uses, Expenditures, and Production

- Farm fuel prices, use, and expenditures fell in 1993 and the first half of 1994, but are expected to increase slightly in 1995.
- Imports of crude oil have risen in 1994, while prices have dropped. A gradual increase in crude oil price is projected for 1995. U.S. crude oil production is expected to fall both in 1994 and 1995.
- U.S. petroleum consumption in 1994 is expected to be 3 percent above 1993. Demand growth in 1995 could drop to only 0.5 percent.

This issue of RTD UPDATES summarizes farm prices of fuels (diesel, gasoline, and LP gas) and their consumption and expenditures in agricultural production. It also summarizes national petroleum consumption, production, imports and world crude oil prices for the years 1994 and 1995 based on Department of Energy forecasts.

Prices paid by farmers for gasoline, diesel, and LP gas are heavily influenced by prices for crude oil, especially imported crude oil. In the first half of 1994 farm fuel (diesel, gasoline, and LP gas) prices fell by 5-8 percent as imported crude oil price fell. In 1995, the price of imported crude oil is expected to rise gradually causing farm fuel prices to rise slightly.

Farm energy expenditures fell in 1993. Lower energy prices and lower fuel use (because of fewer acres planted and harvested in 1993 than 1992) contributed to lower energy expenditures. Energy input constituted 3.6 percent of total farm production expenditures in 1993, compared with 3.8 percent in 1992.

Indirect use of energy in the form of fertilizer and pesticides (which require energy for manufacture and distribution) was about the same as direct farm use in 1991. Because farms supply the raw material (mostly corn) for ethanol production, they are providers as well as users of energy. Ethanol production in 1993 was 1.2 billion gallons up from 1.1 billion in 1992. Production has been steadily growing in recent years because of the Oxygenated Fuels Program of the Clean Air Act Amendments of 1990.

Demand growth for petroleum is projected to be very slow in 1995, due to slower economic growth and assumed normal weather. Domestic crude oil production, on the other hand, is expected to decline in 1994 and 1995 by 2.5 and 1.9 percent, respectively, causing imports of net crude to increase. Net imports as a share of total supply is forecast to be 45 percent in 1994 and 46 percent in 1995.

Contact: Mohinder Gill, RTD, (202) 219-0447.

### About RTD UPDATES

RTD UPDATES is a semimonthly series featuring data relating to agricultural resources, the environment, food safety, and technology. These UPDATES report recent data from surveys of farm operators and others knowledgeable about changing agricultural resource conditions, with only minimal interpretation or analysis. Please contact the individual listed at the end of the text for additional information about the data in this UPDATE. If you would like to be added to the mailing list or have other questions about RTD UPDATES, contact Richard Magleby, (202) 219-0436.

### Fuel and crude oil prices

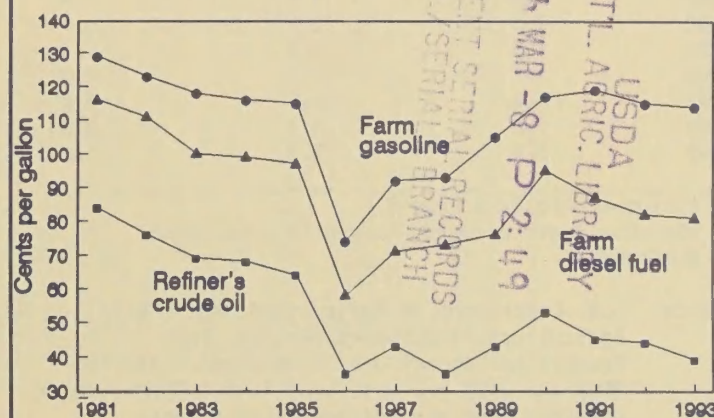




Table 1--Average U.S. prices of farm fuels and crude oil

Year	Gasoline 1/ 2/	Diesel 1/2/4/	LP gas 1/ 2/	Crude oil
Dollar/gallon 3/				
1981	1.29	1.16	0.70	0.84
1982	1.23	1.11	0.71	0.74
1983	1.18	1.00	0.77	0.69
1984	1.16	1.00	0.76	0.63
1985	1.15	0.97	0.73	0.64
1986	0.74	0.58	0.55	0.35
1987	0.92	0.71	0.59	0.43
1988	0.93	0.73	0.59	0.35
1989	1.05	0.76	0.58	0.43
1990	1.17	0.95	0.83	0.53
1991	1.19	0.87	0.75	0.45
1992	1.15	0.82	0.72	0.44
1993	1.14	0.82	0.78	0.39
January 1993	1.13	0.80	0.86	-
April 1993	1.15	0.82	0.78	-
July 1993	1.13	0.79	0.73	-
October 1993	1.15	0.87	0.73	-
January 1994	1.04	0.74	0.74	-
April 1994	1.05	0.77	0.73	-
July 1994	1.12	0.77	0.71	-

1/ Based on surveys of farm supply dealers conducted by the National Agricultural Statistics Service, USDA.

2/ Bulk delivery. Leaded regular gasoline survey item discontinued after 1992, and unleaded gasoline survey item added January 1993.

3/ Includes Federal, State and local per gallon taxes.

4/ Excludes Federal excise tax.

Table 2--U.S. farm energy expenditures, 1989-93

	1989	1990	1991	1992	1993
\$ billion					
Fuels and lubricants:					
Gasoline	1.44	1.65	1.50	1.72	1.58
Diesel	2.12	2.42	2.34	2.65	2.69
LP gas	0.38	0.53	0.44	0.65	0.58
Other	0.51	0.57	0.65	0.63	0.45
Total	4.45	5.17	4.93	5.65	5.20
Electricity:					
Excluding irrigation	1.69	1.65	1.57	1.78	d/
For irrigation	0.64	0.65	0.76	0.84	d/
Total	2.33	2.30	2.33	2.62	2.67
Total electricity and fuels & lubricants	6.78	7.47	7.26	8.27	7.87
Percent change from preceding year	-4.51	10.18	-2.81	13.90	-4.84

Source: U.S. Department of Agriculture, National Agricultural Statistics Service, Farm Production Expenditures, 1989, 1990, and 1991 Summaries. Data for 1992 and 1993 are from the National Agricultural Statistics Service and are not elsewhere published.

d/ = Discontinued

Table 3--Fuel purchased for farm use, United States, 1974-91 1/ 2/

Year	Gasoline	Diesel	LP gas
Billion gallons			
1980	3.0	3.2	1.1
1981	2.7	3.1	1.0
1982	2.4	2.9	1.1
1983	2.3	3.0	0.9
1984	2.1	3.0	0.9
1985	1.9	2.9	0.9
1986	1.7	2.9	0.7
1987	1.5	3.0	0.6
1988	1.6	2.8	0.6
1989	1.3	2.5	0.7
1990	1.5	2.7	0.6
1991	1.4	2.8	0.6
1992	1.6	3.1	0.9
1993	1.4	3.3	0.7

1/ Excludes Alaska & Hawaii.

2/ Excludes fuels used for household & personal business.

Source: U.S. Department of Agriculture, National Agricultural Statistics Service, Farm Production Expenditures Summaries. Data for 1992 and 1993 are developed from information obtained from the National Agricultural Statistics Service and are not elsewhere published.

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Table 4--U.S. petroleum consumption-supply balance, 1991-95

	Forecast				
Item	1991	1992	1993	1994	1995
Million barrels/day					
Consumption:					
Motor gasoline	7.19	7.27	7.48	7.57	7.65
Distillate fuel	2.92	2.98	3.04	3.20	3.25
Residual fuel	1.16	1.09	1.08	1.10	1.09
Other petroleum 1/	5.45	5.66	5.64	5.86	5.82
Total	16.72	17.01	17.24	17.73	17.81
Supply:					
Production 2/	9.90	9.73	9.60	9.42	9.43
Net imports and SPR 3/	6.63	7.01	7.61	8.00	8.14
Net stock withdrawals	0.19	0.30	0.03	0.30	0.24
Total	16.72	17.04	17.24	17.72	17.81
Net imports as a share of total supply	Percent				
	39.65	41.14	44.14	45.11	45.70
Percent change from previous year					
Consumption		1.73	1.35	2.84	0.45
Production		-1.72	-1.34	-1.88	0.00
Imports		5.97	8.56	5.12	1.75

1/ Includes crude oil product supplied, natural gas liquid other hydrocarbons and alcohol, and jet fuels.

2/ Includes domestic oil production, natural gas liquid, and other domestic processing gains (i.e., volumetric gain in refinery cracking and distillation process).

3/ Imports includes both crude oil and refined products. SPR denotes the Strategic Petroleum Reserves.

Source: U.S. Department of Energy, Energy Information Administration. Short-Term Energy Outlook. DOE/EIA-0202(94/3Q), August 1994.

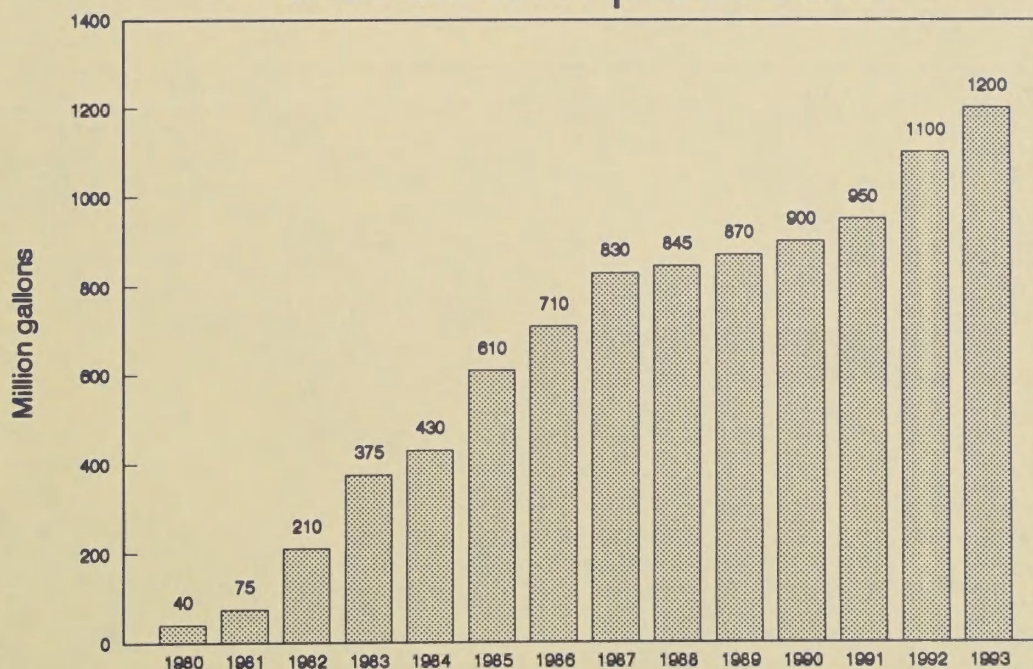
Table 5--Composition of energy use in U.S. Agriculture

Year	Total indirect 1/	Total direct 2/	Total direct & indirect
-----Trillion BTU's-----			
1965	412	1139	1551
1966	467	1124	1591
1967	524	1116	1640
1968	586	1138	1724
1969	596	1152	1748
1970	627	1155	1782
1971	681	1171	1852
1972	680	1128	1808
1973	707	1347	2054
1974	768	1049	1817
1975	722	1201	1923
1976	858	1260	2118
1977	892	1232	2124
1978	844	1411	2255
1979	912	1284	2156
1980	953	1142	2095
1981	988	1071	2059
1982	907	1012	1919
1983	729	985	1714
1984	880	965	1845
1985	899	899	1798
1986	819	801	1620
1987	752	820	1572
1988	774	823	1597
1989	773	779	1552
1990	809	767	1576
1991	815	785	1600
1992	827	na	na
1993	822	na	na

1/ Fertilizers and pesticides. 2/ Gasoline, diesel, LP gas, and electricity.  
na = Not available.

Source: Environmental Protection Agency, and ERS, USDA.

## U.S. ethanol production



Source: Renewable Fuels Association Washington, DC 20001, Nov. 16, 1994



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